

CASE STUDY

Carbontech Case study 007
14" Support Corrosion Composite Wrap





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PROJECT DETAILS



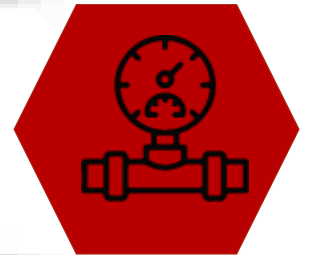
Case Study Number
CTCS:007

Design Pressure
31.5 Bar



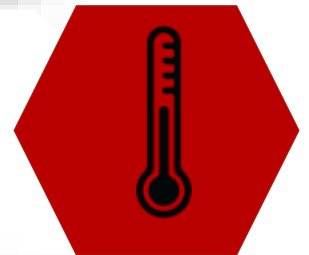
Repair Summary
14" Cure line Supports

Operating Pressure
2.59 Bar



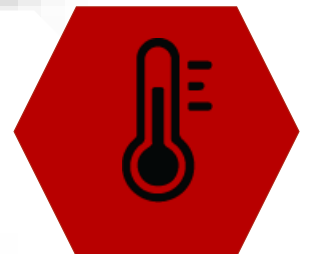
Client
Shell & BP (Sapref)

Design Temperature
60°C



Service Type
Crude Oil

Operating Temperature
60°C



Line Size
14 Inch Line

Base Material
SA-106 Gr-B



Line Class
NA



ANOMALY DESCRIPTION

The 14" Crude line that supplies the refinery was inspected and found severe external pitting corrosion on the contact areas where the pipe meets the concrete sleepers. 178 support sections were identified with 27 that had major wall thinning. Major findings had wall losses of approximately 70 percent. 2,7mm wall left from an original 9,52mm.

Figure 1: showing the underside of the pipe with external coating yet to be removed, pipe support can be seen under the pipe



INTEGRITY CONCERNS

Further deterioration could lead to possible leaks on the pipeline. The pipeline is the main crude oil supply to the refinery which could result in major downtime, fire and environmental hazards. It was found that the line is operating below the minimum allowable wall thickness.



THE CARBONTECH SOLUTION

Surface Preparation achieved: Nace 2
Product used: Revowrap 110
Engineering calculations: ISO TS 24817
Layers used: 4 layers
Post cured: Not required.

Figure 2: Shows the completed composite repair



Figure 3: Showing the pipe jacking equipment



Figure 4: Shows the bare metal finish and pipe support.

CONCLUSION

A successful repair on all 27 supports was implemented and a guarantee of 20years is given to the wrapped areas for external corrosion and this will allow the piping to run according to its original design criteria. The wraps were all coated with a UV protection as they are continually exposed to the elements.



CARBONTECH

The place chemistry, engineering and global expertise are brought together to drive progressive innovation in advanced composite technologies for the emergency repair of critical assets "There is nothing generic about us" we don't just sell pipe wraps; we provide accurate engineering backing to deliver tailored solutions

Sound and responsible engineering is the basis on which we build our company, products and services. It is the core to our success and it is the foundation on which we have engineered and manufactured our innovative and bespoke products

We strive by a zero-failure philosophy and warrant our engineered composite solutions are tested, proven and validated. We vow to provide dependable, responsible and accurate information regarding the capabilities of our systems

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PROGRESSIVE COMPOSITE ENGINEERING

